



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

ELECTRONICS TEST & DEVELOPMENT CENTRE

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2017

**"General Requirements for the Competence of Testing &
Calibration Laboratories"**

for its facilities at

30, GMC - NIO ROAD, P.O. GOA UNIVERSITY, BAMBOLIM, NORTH GOA, GOA, INDIA

in the field of

CALIBRATION

Certificate Number: CC-2049

Issue Date: 11/05/2021

Valid Until:

10/05/2023

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Identity : ELECTRONICS TEST & DEVELOPMENT CENTRE,GOA

Signed for and on behalf of NABL



N. Venkateswaran
Chief Executive Officer



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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	100 mA to 1 A	0.09 % to 0.11 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz)	Shunt UDL4-Z2 with DMM by V/R Method	1 A to 20 A	0.11 % to 0.6 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz to 1 kHz)	HP 3458A DMM by Direct Method	100 µA to 100 mA	0.1 % to 0.09 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage (at 50 Hz)	Fluke 80K40 HV Probe with Fluke 87V DMM by Direct Method	1 kV to 15 kV	6%



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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz)	Voltech PM 3000A by Direct Method	700 V to 1000 V	0.07 % to 0.1 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A, HP 34401A DMM by Direct Method	1 V to 700 V	0.01 % to 0.07 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	10 mV to 100 mV	0.03 % to 0.01 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	100 mV to 1 V	0.01%
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance (at 1 kHz)	HP 4274A & R&S HM8118 LCR Meter by Direct Method	100 pF to 1 µF	0.11 % to 0.05 %



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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance (at 1 kHz)	HP 4274A & R&S HM8118 LCR Meter by Direct Method	100 μ H to 10 H	0.3 % to 0.15 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power factor at 50Hz	Voltech PM3000A Power Analyser by Direct Method	0.2 PF (Lead & Lag) to 1.0 PF	0.015 PF to 0.018 PF
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Single Phase AC power at (50 Hz, 60V to 240V, 0.1A to 25A, PF 0.5 lag & lead to UPF)	Voltech PM3000A Power Analyser by Direct Method	6 W to 4.8 kW	0.035 % to 0.05 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 5 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 μ A to 100 mA	0.26 % to 0.08 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz to 5 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 mA to 3 A	0.08 % to 0.15 %



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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz)	Fluke 5520A & Fluke 9100 with 50 Turn Current Coil by Direct Method	20 A to 1000 A	0.69 % to 0.71 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz)	Fluke 5520A & Fluke 9100 by Direct Method	3 A to 20 A	0.17%
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 10 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	10 mV to 100 mV	0.1 % to 0.03 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 10 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 mV to 300 V	0.03%
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 8 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	300 V to 1000 V	0.03 % to 0.04 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	1 µF to 10 mF	0.05 % to 1.81 %



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21	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	100 pF to 1000 pF	0.26 % to 0.05 %
22	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	1000 pF to 1 µF	0.115%
23	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Inductance (at 1 kHz)	GR STD Inductor & Discrete values in decade Inductance Box by Direct Method	1 mH to 10 H	0.12%
24	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Inductance (at 1 kHz)	GR STD Inductor & Discrete values in decade Inductance Box by Direct Method	100 µH to 1 mH	0.36 % to 0.11 %
25	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Power Factor at 240V-5A, 50Hz	Fluke 5502A & Fluke 9100 Calibrator by Direct Method	0.2 PF (Lead & Lag) to 1.0 PF	0.0001 PF to 0.0013 PF
26	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Single Phase AC power at (50 Hz, 120V to 240V, 0.1A to 20A, PF 0.2 lag & lead to UPF)	Fluke 5502A & Fluke 9100 Calibrator by Direct Method	2.4 W to 4.8 kW	0.2 % to 0.015 %



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27	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Shunt UDL4-Z2 with HP 3458A, HP 34401A DMM by V/R Method	1 A to 20 A	0.014 % to 0.57 %
28	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	HP 3458A& HP 34401A DMM by Direct Method	100 µA to 100 mA	0.004%
29	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	HP 3458A & HP 34401A DMM by Direct Method	100 mA to 1 A	0.004 % to 0.014 %
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Fluke 80k40 with Fluke 87V by Direct Method	1 kV to 30 kV	2.5 % to 1.5 %
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	1 mV to 100 mV	0.035 % to 0.001 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	10 V to 1000 V	0.001%



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33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	100 mV to 10 V	0.001%
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & Hp 34401A DMM by Direct Method	0.01 ohm to 1 ohm	0.58 % to 0.008 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	1 milli-ohm to 10 mohm	5.74 % to 0.58 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	1 ohm to 100 ohm	0.008 % to 0.002 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	10 Mega-ohm to 100 Mega-ohm	0.007 % to 0.05 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	100 Mega-ohm to 1 Giga-ohm	0.05 % to 0.57 %



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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	100 ohm to 10 Mega-ohm	0.002 % to 0.007 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A & Fluke 9100 by Direct Method	1 A to 20 A	0.027 % to 0.12 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A, Fluke 9100 by Direct Method	100 µA to 1 A	0.04 % to 0.027 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A & Fluke 9100 with 50 Turn Current Coil by Direct Method	20 A to 1000 A	0.05 % to 0.79 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A, Fluke 9100 by Direct Method	1 mV to 100 mV	0.12 % to 0.004 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A & Fluke 9100 by Direct Method	10 V to 1000 V	0.009%



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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A & Fluke 9100 by Direct Method	100 mV to 10 V	0.004 % to 0.002 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A, ESI SR1 Series & ZMSR Series by Direct Method	0.01 ohm to 1 ohm	0.09 % to 0.01 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 & 8400 HV by Direct Method	0.1 Mega-ohm to 1 Mega-ohm	2 % to 0.55 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 & 8400 HV by Direct Method	1 Mega-ohm to 10 Giga-ohm	0.55 % to 0.7 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	1 Mega-ohm to 10 Mega-ohm	0.01 % to 0.01 %
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A & ZMSR Series by Direct Method	1 mohm	0.55%



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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	1 ohm to 100 ohm	0.01 % to 0.006 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 HV by Direct Method	10 Giga-ohm to 100 Giga-ohm	0.7 % to 1.25 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100, ESI SR1 Series & ZMSR Series by Direct Method	10 Mega-ohm to 1 Giga-ohm	0.01 % to 0.57 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A & ZMSR Series by Direct Method	10 mohm	0.08%
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 HV by Direct Method	100 Giga-ohm to 1 Tera-ohm	1.25 % to 5.5 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	100 ohm to 1 Mega-ohm	0.006 % to 0.01 %



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57	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Level	Fluke 5520A with scope option by Direct Method	1 mV _{pp} to 120 V _{pp}	0.4 % to 0.14 %
58	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope, Bandwidth	Fluke 5520A with scope option by Direct Method	10 kHz to 600 MHz	4%
59	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope, Time Marker	Fluke 5520A with scope option by Direct Method	5 s to 2 ns	0.05 % to 0.02 %
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	915 °C to 1800 °C	0.55°C
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Measure mode by Simulation Method	-190 °C to 1000 °C	0.15 °C to 0.23 °C
62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-190 °C to 1200 °C	0.26°C



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63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-100 °C to 1350 °C	0.15 °C to 0.31 °C
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Measure mode by Simulation Method	1 °C to 1300 °C	0.27°C
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	145 °C to 1750 °C	0.44°C
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Pt-100	Eurotron Microcal 200+ in measure mode by Simulation Method	-200 °C to 850 °C	0.15°C
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	165 °C to 1750 °C	0.44°C
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-190 °C to 400 °C	0.17°C



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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	920 °C to 1800 °C	0.54°C
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-190 °C to 1000 °C	0.27°C
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-190 °C to 1200 °C	0.25°C
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode / Simulation Method	-100 °C to 1260 °C	0.13 °C to 0.27 °C
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	100 °C to 1300 °C	0.26°C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	150 °C to 1750 °C	0.43°C



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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD Pt-100	Eurotron Microcal 200+ in Source mode by Simulation Method	-200 °C to 850 °C	0.15°C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	170 °C to 1750 °C	0.25 °C to 0.45 °C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-100 °C to 400 °C	0.16°C
78	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	CNT 90 Pendulum Counter Timer by Direct Method	10 Hz to 10 kHz	0.00015 % to 0.00001 %
79	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	CNT 90 Pendulum Counter Timer by Direct Method	10 kHz to 3 GHz	0.00006 % to 0.000002 %
80	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval	CNT 90 Pendulum Counter Timer by Comparison Method	1 s to 3600 s	0.04 s to 0.07 s



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81	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	1 Hz to 10 kHz	0.001 % to 0.00002 %
82	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	10 kHz to 100 MHz	0.00002 % to 0.00001 %
83	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	100 MHz to 3 GHz	0.00001%
84	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Calipers (Dial / Digital) L.C. : 0.01 mm	Gauge Blocks. Grade "O" and Accessories Set by Comparison Method	0 to 300 mm	8.8µm
85	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge: Plunger Type Analog / Digital LC 0.01 mm	Gauge Blocks. Grade "O" & Comparator Stand by Comparison Method	0 to 20 mm	6.6µm



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86	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Analog/Digital) L.C. : 0.01 mm	Gauge Blocks. Grade "O" by Comparison Method	0 to 25 mm	4.0µm
87	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Vernier Calipers (Dial / Analog / Digital) L.C. : 0.02 mm	Gauge Blocks. Grade "O" and Accessories Set by Comparison Method	0 to 300 mm	15.8µm
88	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Vernier Height Gauge Analog / Dial / Digital L.C.: 0.02 mm	Slip Gauges, Long slip Gauges & Surface plate by Comparison Method	0 to 600 mm	18.6µm
89	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (HYDRAULIC) Pressure Gauges, Pressure Indicators & Pressure Calibrators	By using Dead Weight Tester by Comparison Method as per DKD-R 6-1 guidelines.	0 to 400 bar	0.27 bar
90	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (PHEUMATIC) Pressure Gauges, Pressure Ineicators & Pressure Calibrators.	By using Digital Pressure Calibrator ,Procedure based on DKD-R 6-1 guidelines.	2 bar to 25 bar	0.014 bar



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91	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (PNEUMATIC) Pressure Gauges, Pressure Indicators & Pressure Calibrators.	By using Digital Pressure Calibrator , Procedure based on DKD-R 6-1 guidelines.	0 to 2 bar	0.022 bar
92	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauges, Vacuum Indicators & Vacuum Calibrators.	By using Digital Pressure Calibrator based on Procedure based on ISO 3567 & 27893 standards.	(-) 0.85 bar to 0	0.005 bar
93	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	1 g	0.06 mg
94	MECHANICAL-WEIGHTS	Mass/Weights M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	50 mg	0.07 mg



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95	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	1 mg	0.06 mg
96	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	10 g	0.07 mg
97	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	10 mg	0.08 mg
98	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.1 mg. Procedure based on OIML R 111 guidelines.	100 g	0.19 mg



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99	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	100 mg	0.07 mg
100	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	2 g	0.06 mg
101	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	2 mg	0.06 mg
102	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	20 g	0.07 mg



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103	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	20 mg	0.07 mg
104	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.1 mg. Procedure based on OIML R 111 guidelines.	200 g	0.20 mg
105	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	200 mg	0.07 mg
106	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	5 g	0.06 mg



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107	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	5 mg	0.06 mg
108	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	50 g	0.07 mg
109	MECHANICAL-WEIGHTS	Mass/Weights of M1 class and coarser	E2 class Standard Weights & Digital semi Micro Balance with a readability of 0.01 mg. Procedure based on OIML R 111 guidelines.	500 mg	0.07 mg
110	MECHANICAL-WEIGHTS	Mass/Weights of M3 class	E2 class Standard Weights & Electronic Weighing Balance with a readability of 0.1 g. Procedure based on OIML R 111 guidelines.	10 kg	0.4 g



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111	MECHANICAL-WEIGHTS	Mass/Weights of M3 class	E2 class Standard Weights & Electronic Weighing Balance with a readability of 0.01 g. Procedure based on OIML R 111 guidelines.	2 kg	0.014 g
112	MECHANICAL-WEIGHTS	Mass/Weights of M3 class	E2 class Standard Weights & Electronic Weighing Balance with a readability of 0.1 g. Procedure based on OIML R 111 guidelines.	5 kg	0.13 g
113	MECHANICAL-WEIGHTS	Mass/Weights of M3 class	E2 class Standard Weights & Electronic Weighing Balance with a readability of 0.01 g. Procedure based on OIML R 111 guidelines.	500 g	0.014 g
114	MECHANICAL-WEIGHTS	Mass/Weights of M3 class and coarser	E2 class Standard Weights & Electronic Weighing Balance with a readability of 0.01 g. Procedure based on OIML R 111 guidelines.	1 kg	0.014 g



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115	THERMAL-TEMPERATURE	Glass Thermometers	Oil Bath, Alcohol Bath, SSPRT & Temperature Calibrator by Comparison Method	-10 °C to 180 °C	0.32 °C
116	THERMAL-TEMPERATURE	Temperature gauges, RTD / Thermocouple with or without Temp. Indicator/Recorder/Data Logger	Dry Block Furnace (Isotech-Pegasus+1200), Oil Bath, Alcohol Bath using SSPRT & Temperature Calibrator by Comparison Method	-35 °C to 600 °C	0.27°C
117	THERMAL-TEMPERATURE	Temperature indicator with sensor of Baths, Dry Block.	SSPRT/ "S" Type Thermocouple, Temperature Calibrator by Comparison Method	-35 °C to 50 °C	0.18 °C
118	THERMAL-TEMPERATURE	Temperature indicator with sensor of Baths, Dry Blocks.	SSPRT/ "S" Type Thermocouple, Temperature Calibrator by Comparison Method	50 °C to 200 °C	0.24°C



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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	100 mA to 1 A	0.09 % to 0.11 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz)	Shunt UDL4-Z2 with DMM by V/R Method	1 A to 20 A	0.11 % to 0.6 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current (at 50 Hz to 1 kHz)	HP 3458A DMM by Direct Method	100 µA to 100 mA	0.1 % to 0.09 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage (at 50 Hz)	Fluke 80K40 HV Probe with Fluke 87V DMM by Direct Method	1 kV to 15 kV	6%



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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz)	Voltech PM 3000A by Direct Method	700 V to 1000 V	0.07 % to 0.1 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A, HP 34401A DMM by Direct Method	1 V to 700 V	0.01 % to 0.07 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	10 mV to 100 mV	0.03 % to 0.01 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage (at 50 Hz to 1 kHz)	HP 3458A & HP 34401A DMM by Direct Method	100 mV to 1 V	0.01%
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance (at 1 kHz)	HP 4274A & R&S HM8118 LCR Meter by Direct Method	100 pF to 1 μF	0.11 % to 0.05 %



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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Inductance (at 1 kHz)	HP 4274A & R&S HM8118 LCR Meter by Direct Method	100 μ H to 10 H	0.3 % to 0.15 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power factor at 50Hz	Voltech PM3000A Power Analyser by Direct Method	0.2 PF (Lead & Lag) to 1.0 PF	0.015 PF to 0.018 PF
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Single Phase AC power at (50 Hz, 60V to 240V, 0.1A to 25A, PF 0.5 lag & lead to UPF)	Voltech PM3000A Power Analyser by Direct Method	6 W to 4.8 kW	0.035 % to 0.05 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (50 Hz to 5 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 μ A to 100 mA	0.26 % to 0.08 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz to 5 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 mA to 3 A	0.08 % to 0.15 %



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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz)	Fluke 5520A & Fluke 9100 with 50 Turn Current Coil by Direct Method	20 A to 1000 A	0.69 % to 0.71 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current (at 50 Hz)	Fluke 5520A & Fluke 9100 by Direct Method	3 A to 20 A	0.17%
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 10 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	10 mV to 100 mV	0.1 % to 0.03 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 10 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	100 mV to 300 V	0.03%
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage (at 50 Hz to 8 kHz)	Fluke 5520A & Fluke 9100 by Direct Method	300 V to 1000 V	0.03 % to 0.04 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	1 µF to 10 mF	0.05 % to 1.81 %



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21	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	100 pF to 1000 pF	0.26 % to 0.05 %
22	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance (at 1 kHz)	GR STD Capacitors, Fluke 5520A, Fluke 9100 by Direct Method	1000 pF to 1 μF	0.115%
23	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Inductance (at 1 kHz)	GR STD Inductor & Discrete values in decade Inductance Box by Direct Method	1 mH to 10 H	0.12%
24	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Inductance (at 1 kHz)	GR STD Inductor & Discrete values in decade Inductance Box by Direct Method	100 μH to 1 mH	0.36 % to 0.11 %
25	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Power Factor at 240V-5A, 50Hz	Fluke 5502A & Fluke 9100 Calibrator by Direct Method	0.2 PF (Lead & Lag) to 1.0 PF	0.0001 PF to 0.0013 PF
26	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Single Phase AC power at (50 Hz, 120V to 240V, 0.1A to 20A, PF 0.2 lag & lead to UPF)	Fluke 5502A & Fluke 9100 Calibrator by Direct Method	2.4 W to 4.8 kW	0.2 % to 0.015 %



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27	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Shunt UDL4-Z2 with HP 3458A, HP 34401A DMM by V/R Method	1 A to 20 A	0.014 % to 0.57 %
28	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	HP 3458A& HP 34401A DMM by Direct Method	100 µA to 100 mA	0.004%
29	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	HP 3458A & HP 34401A DMM by Direct Method	100 mA to 1 A	0.004 % to 0.014 %
30	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Fluke 80k40 with Fluke 87V by Direct Method	1 kV to 30 kV	2.5 % to 1.5 %
31	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	1 mV to 100 mV	0.035 % to 0.001 %
32	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	10 V to 1000 V	0.001%



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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
33	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	HP 3458A & HP 34401A DMM by Direct Method	100 mV to 10 V	0.001%
34	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & Hp 34401A DMM by Direct Method	0.01 ohm to 1 ohm	0.58 % to 0.008 %
35	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	1 milli-ohm to 10 mohm	5.74 % to 0.58 %
36	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	1 ohm to 100 ohm	0.008 % to 0.002 %
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	10 Mega-ohm to 100 Mega-ohm	0.007 % to 0.05 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	100 Mega-ohm to 1 Giga-ohm	0.05 % to 0.57 %



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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	HP 3458A & HP 34401A DMM by Direct Method	100 ohm to 10 Mega-ohm	0.002 % to 0.007 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A & Fluke 9100 by Direct Method	1 A to 20 A	0.027 % to 0.12 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A, Fluke 9100 by Direct Method	100 µA to 1 A	0.04 % to 0.027 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Fluke 5520A & Fluke 9100 with 50 Turn Current Coil by Direct Method	20 A to 1000 A	0.05 % to 0.79 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A, Fluke 9100 by Direct Method	1 mV to 100 mV	0.12 % to 0.004 %
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A & Fluke 9100 by Direct Method	10 V to 1000 V	0.009%



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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Fluke 5520A & Fluke 9100 by Direct Method	100 mV to 10 V	0.004 % to 0.002 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A, ESI SR1 Series & ZMSR Series by Direct Method	0.01 ohm to 1 ohm	0.09 % to 0.01 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 & 8400 HV by Direct Method	0.1 Mega-ohm to 1 Mega-ohm	2 % to 0.55 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 & 8400 HV by Direct Method	1 Mega-ohm to 10 Giga-ohm	0.55 % to 0.7 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	1 Mega-ohm to 10 Mega-ohm	0.01 % to 0.01 %
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A & ZMSR Series by Direct Method	1 mohm	0.55%



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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	1 ohm to 100 ohm	0.01 % to 0.006 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 HV by Direct Method	10 Giga-ohm to 100 Giga-ohm	0.7 % to 1.25 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100, ESI SR1 Series & ZMSR Series by Direct Method	10 Mega-ohm to 1 Giga-ohm	0.01 % to 0.57 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 9409B, Fluke 5520A & ZMSR Series by Direct Method	10 mohm	0.08%
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Vaiseshika 8400 HV by Direct Method	100 Giga-ohm to 1 Tera-ohm	1.25 % to 5.5 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Fluke 5520A, Fluke 9100 & ESI SR1 Series by Direct Method	100 ohm to 1 Mega-ohm	0.006 % to 0.01 %



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57	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Level	Fluke 5520A with scope option by Direct Method	1 mV _{pp} to 120 V _{pp}	0.4 % to 0.14 %
58	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope, Bandwidth	Fluke 5520A with scope option by Direct Method	10 kHz to 600 MHz	4%
59	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope, Time Marker	Fluke 5520A with scope option by Direct Method	5 s to 2 ns	0.05 % to 0.02 %
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	915 °C to 1800 °C	0.55°C
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Measure mode by Simulation Method	-190 °C to 1000 °C	0.15 °C to 0.23 °C
62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-190 °C to 1200 °C	0.26°C



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63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-100 °C to 1350 °C	0.15 °C to 0.31 °C
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Measure mode by Simulation Method	1 °C to 1300 °C	0.27°C
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	145 °C to 1750 °C	0.44°C
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Pt-100	Eurotron Microcal 200+ in measure mode by Simulation Method	-200 °C to 850 °C	0.15°C
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	165 °C to 1750 °C	0.44°C
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in measure mode by Simulation Method	-190 °C to 400 °C	0.17°C



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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	920 °C to 1800 °C	0.54°C
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-190 °C to 1000 °C	0.27°C
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-190 °C to 1200 °C	0.25°C
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode / Simulation Method	-100 °C to 1260 °C	0.13 °C to 0.27 °C
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	100 °C to 1300 °C	0.26°C
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	150 °C to 1750 °C	0.43°C



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75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD Pt-100	Eurotron Microcal 200+ in Source mode by Simulation Method	-200 °C to 850 °C	0.15°C
76	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	170 °C to 1750 °C	0.25 °C to 0.45 °C
77	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type Thermocouple	Eurotron Microcal 200+ & Fluke 5520A in Source mode by Simulation Method	-100 °C to 400 °C	0.16°C
78	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	CNT 90 Pendulum Counter Timer by Direct Method	10 Hz to 10 kHz	0.00015 % to 0.00001 %
79	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	CNT 90 Pendulum Counter Timer by Direct Method	10 kHz to 3 GHz	0.00006 % to 0.000002 %
80	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval	CNT 90 Pendulum Counter Timer by Comparison Method	1 s to 3600 s	0.04 s to 0.07 s



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81	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	1 Hz to 10 kHz	0.001 % to 0.00002 %
82	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	10 kHz to 100 MHz	0.00002 % to 0.00001 %
83	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Fluke 5520A, R&S SMB100A by Direct Method	100 MHz to 3 GHz	0.00001%
84	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (PNEUMATIC) Pressure Gauges, Pressure Inicators & Pressure Calibrators.	By using Digital Pressure Calibrator ,Procedure based on DKD-R 6-1 guidelines.	2 bar to 25 bar	0.014 bar
85	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (PNEUMATIC) Pressure Gauges, Pressure Indicators & Pressure Calibrators.	By using Digital Pressure Calibrator , Procedure based on DKD-R 6-1 guidelines.	0 to 2 bar	0.022 bar



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86	MECHANICAL-PRESSURE INDICATING DEVICES	PRESSURE (HYDRAULIC) Pressure Gauges, Pressure Indicators & Pressure Calibrators.	By using Digital Pressure Calibrator based on Procedure based on DKD-R 6-1 guidelines.	0 to 240 bar	0.70 bar
87	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauges, Vacuum Indicators & Vacuum Calibrators.	By using Digital Pressure Calibrator based on Procedure based on ISO 3567 & 27893 standards.	(-) 0.85 bar to 0	0.005 bar
88	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Indicator with Sensor of Humidity chambers, Test cabinets (RH at 25 °C to 55 °C Temperature)	Digital Thermo Hygrometer with probe at single position in DUC	35 % to 95 %	1.25%
89	THERMAL-TEMPERATURE	Temperature Indicator of Refrigerators, Deep Freezers.	SSPRT & Temperature calibrator at single position in DUC	-35 °C to 10°C	1.2°C
90	THERMAL-TEMPERATURE	Temperature indicator with sensor of Baths, Dry Block.	SSPRT/ "S" Type Thermocouple, Temperature Calibrator by Comparison Method	-35 °C to 50 °C	0.18 °C



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91	THERMAL-TEMPERATURE	Temperature indicator with sensor of Baths, Dry Blocks.	SSPRT/ "S" Type Thermocouple, Temperature Calibrator by Comparison Method	50 °C to 200 °C	0.24°C
92	THERMAL-TEMPERATURE	Temperature indicator with sensor of Ovens, Dry Blocks, Chambers	SSPRT & Temperature calibrator at single position in DUC	-35 °C to 250 °C	1.2°C

* CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.